

LEECH LAKE RESERVOIR DAM
Mississippi River Headwaters Reservoirs
Federal Dam Vicinity
Cass County
Minnesota

HAER No. MN-67

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Rocky Mountain Regional Office
Department of the Interior
P.O. Box 25287
Denver, Colorado 80225

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HISTORIC AMERICAN ENGINEERING RECORD
Leech Lake Reservoir Dam

I. Introduction

Location: Leech Lake, Federal Dam Vicinity, Cass County, Minnesota

Quad: Federal Dam Quadrangle

UTM: N5233220, E407560

Date of Construction: 1882-1884, Reconstruction 1900-1903

Present Owner: St. Paul District, U.S. Army Corps of Engineers

Present Use: Flood Control, Recreation, Natural Resource Management

Significance: The Leech Lake Reservoir Dam is one of six Mississippi River Headwaters Reservoirs dam sites that are historically significant for their association with navigation, commerce, tourism, the Ojibway Indians and U.S. Indian policy in Minnesota in the late 19th century.

By providing a consistent flow of water throughout the navigation season, the Leech Lake Dam enhanced navigation on and aided in the commercial development of the Upper Mississippi River. The dam site was also one of the earliest non-Indian settlements in the region and by the late 19th century was attracting some of the first tourists to the area. The dam had a devastating impact on the Ojibway Indians who lived on the lake's shores. The project precipitated a century-long conflict between the tribe and the U.S. government over the damages resulting from the inundation of tribal lands and property.

Historian: Dr. Jane Lamm Carroll
St. Paul District
U.S. Army, Corps of Engineers

II. HISTORY

The Leech Lake Dam is located on the Leech Lake River at the outlet of the lake and is the second in the system of six Mississippi River Headwaters Reservoirs (HAER No. MN-64). The dam is 27 miles above the junction of the Leech Lake and Mississippi rivers, and 410 river miles above St. Paul. The drainage area above the dam is 1,163 square miles.

The Corps began the Leech Lake Dam in 1882 and completed it in 1884, at a cost of \$171,805. The banks of the river are about 3,500 feet apart at the dam, the largest span in the Headwaters system. The original timber dam was 3,600 feet, including 2,600 feet of embankment and 1,000 feet of timber dam on a pile foundation. The original control structure consisted of 125 sluice bays. A stop plank working in grooves controlled the discharge. The Corps modelled the design of the Leech lake Dam on the first dam at Lake Winnibigoshish (HAER No. MN-65).

By the spring of 1898, the timber structure had rotted. The Corps did not operate the Leech Lake Dam again until after they had reconstructed the dam between 1900 and 1903. The Corps replaced the abutments and bays with reinforced concrete, using Saylor's Portland Cement.

The reconstructed Leech Lake Dam was originally 3,160 feet in length. The embankment has a timber diaphragm core filled with puddled clay. The 294-foot control structure consists of reinforced concrete abutments and piers supported by timber pilings. The sluiceways were fitted with stop logs closed by

hand or by derricks with differential blocks. In 1926, the Corps extended the fishway at the dam to allow for the passage of fish at low water stages. After losing part of the control structure due to a flood in 1957, the Corps increased the dike to 3,314 feet and reduced the number of sluiceways to 26. In 1958, the Corps replaced the timber apron with concrete and put in new slide gates in 1970. Like the Winnibigoshish Dam, the Leech Lake Dam supported a roadway across the top of the dam dating from the early 1900s.¹

Between 1882 and 1883, the Corps constructed five buildings at the Leech Lake Dam Site. A cookhouse, office, sleeping quarters, storehouse, and blacksmith shop were listed on the original roster of buildings. The nature of the accommodations for the dam tender before the construction of the present house in the years 1902-1904 were not reported.²

By 1929, the Leech Lake Dam Site consisted of the dam tender's house, an office constructed in 1913, a garage, three barns, a blacksmith shop, a warehouse, an ice house, a root house, and a carpenter shop. A government boat house was located opposite the dam tender's residence on the outlet channel. Due to the construction of the public recreation area at the dam site, with the exception of the house and garage, there is no remaining evidence of the dam site structures.³

Historical Significance of the Leech Lake Dam Site

As the second in the system of six Headwaters dams, the Leech Lake Dam is historically significant for its role in facilitating navigation on the Upper Mississippi River. As part of the reservoir system, the Leech Lake Dam also affected the commerce in the region, specifically the lumber, milling, and water power industries. As with the other dams, the Corps equipped the Leech Lake Dam with log sluices. Dam tenders used the sluices daily during the heyday of logging in the area, which lasted until about 1920.

In the 1890s, although loggers built a railroad between Brainerd and the town of Walker, on Leech Lake, the river remained the primary means of transporting logs out of the region. Records reveal that the loggers around Leech Lake worked closely with the Corps to facilitate the movement of logs downriver.⁴

Leech Lake was the first of the six dam sites where the Corps leased land for tourist concessions. In 1913, the Corps licensed a public boat landing at the dam site, providing public access to the lake, which is surrounded by the Ojibway Indian reservation. The Corps also licensed boating and fishing concessions about the same time. The small village of Federal Dam grew up in the early 1900s to serve the increasing numbers of tourists. The town was actually the first to rent space from the

Corps for tourist concessions.⁵

Before 1920, tourists most often came to the dam site by train, disembarking at Walker, which became the tourist center for the lake. Visitors then rented gear for camping or lodged at one of the town's hotels. Some private cabins and a few resorts were also available for rental by 1920. The Ojibway Indians from the reservation provided guide services for fishing and canoeing. Fishing near the dam itself was also a big attraction.

The Leech Lake Dam Site was one of the earliest permanent non-Indian settlements in north central Minnesota. In the 1880s, the closest town to the dam site was Grand Rapids, located about 30 miles to the east. The closest permanent white settler was a rancher living 61 miles south. Although Walker developed as a lumber town in the 1890s, it was across the lake from the dam site. The isolation of the dam site required the dam tenders and their families to be self-sufficient. Dam personnel raised livestock, poultry, vegetables and hay, as well as purchasing or bartering for food with the Ojibway. Significant permanent non-Indian settlement did not occur at Leech Lake until the early 1900s.

The Leech Lake Ojibway and the Headwaters Reservoirs

Since the late 18th century, Leech Lake had been the principal residential site for the Minnesota Ojibway. The Northwest Fur Company established at least two trading posts at

the lake in the late 1700s. The American Fur Company built a post there in the 1830s, and in 1832, missionaries founded a mission at the village that would endure under various patrons into the 20th Century. In 1881, the Ojibway village on the shore of the lake consisted of six agency buildings, six log cabins, and approximately 30 wigwams. This main village was located on the western side of the lake, opposite the dam site. Members of the band also resided in wigwams and log cabins on islands and scattered along the shore of the lake. The Leech Lake Reservation, which encompassed virtually the entire lake, had been established by treaty in 1855.

As the second dam built on the Ojibway Indian Reservation, the Leech Lake Dam had a significant impact on the lives and subsistence of the Leech Lake band, also called the Pillager band, who lived along the lake's shores. Throughout the controversy between the tribe and the Federal government over the dams, the Pillager band were the most outspoken critics of the project. In 1898, some members of the band engaged in a brief but violent uprising against government officials that was sparked, in part, by the Pillagers' frustration and anger over the lack of adequate compensation for damages resulting from the reservoir project.⁶

The Pillagers were also insistent that the Corps and its contractors pay for rocks and sand taken for the construction and

maintenance of the Leech Lake Dam. The Pillagers complained to the United States Indian Agent assigned to the reservation about the Corps' use of reservation resources for the project and demanded compensation.⁷

During the original dam construction in the early 1880s, the Corps hired many Pillagers to work on the project and other services. Some Pillagers sold food to the Corps or hired out their teams for hauling. As at Winnibigoshish, after construction, the Corps generally did not hire Ojibway to work on the dams.⁸

The Pillagers, led by their chief Flatmouth, threatened to destroy the dams after the 1881 commission announced its award.⁹ Bishop Whipple convinced White Cloud, the Ojibway chief at the White Earth Indian Reservation, to write Flatmouth advising him against violence or sabotage.¹⁰

The Pillagers appear to have suffered significantly from the overflow caused by the dams. The report of the second commission reveals that a bridge, road, sawmill, and gristmill had been destroyed. In addition, the Corps had taken large quantities of timber and rock from the reservation for construction. Most devastating was the overflow of the wild rice marshes and hay fields, which the second commission estimated to cost the band the equivalent of \$18,410.00 annually. There were approximately 1,150 Ojibway living at Leech Lake and they relied heavily on

wild rice to provide food year-round. The dams caused the overflow of about 23,680 acres at Leech Lake.¹¹

The Pillagers owned about 100 horses and an unknown number of cattle, which were all fed with the hay the Indians harvested from the lakeshore. As at Winnibigoshish, the band's traditional fishing holes were inundated and many maple trees, which the Ojibway tapped for maple sap, destroyed. The Leech Lake Indian trader testified that the Ojibway brought in 20-30,000 pounds of maple sugar annually to trade for supplies.¹²

In correspondence and at council meetings, Flatmouth emphatically and repeatedly denied that he ever consented to the dams and accused the government of purposely trying to harm the Ojibway. He claimed the government was trespassing on Indian land and demanded that the reservoir project be stopped. Flatmouth also accused the Corps of causing an outbreak of smallpox among the tribe in 1882. Captain Allen of the Corps called this accusation "laughable," since Flatmouth had confided to one of the engineers that the assistance of Corps personnel during the epidemic had prevented many of his people from dying.¹³

The Pillagers were the most adamant of the bands in resisting the government's efforts to consolidate the Minnesota Ojibway. At the 1889 council with the Rice Commission, most of the Pillagers refused to sign the agreement and expressed open hostility towards commission members. They charged that the dams

had ruined all their means of subsistence and had forced them to dig roots to survive.¹⁴

When the Pillagers revolted in the Sugar Point Uprising of October, 1898, the Corps of Engineers was in the process of tearing down the old wooden dams at Leech and Winnibigoshish and replacing them with concrete structures. Although they needed timber for the new piles, to avoid further conflict with the Ojibway, the Corps refused to accept lumber cut from the reservation.¹⁵ Over the course of the 20th century, the Corps eventually developed a policy of cooperating with the Ojibway on the Leech Lake Reservation to maintain beneficial water levels for wild rice and hay production.

1. Carole Zellie, "Upper Mississippi Headwaters Reservoirs Damsites Cultural Resources Investigation," Report Prepared for the St. Paul District, Corps of Engineers, 1988, p.54.
2. Zellie, p.62.
3. Zellie, pp.62-66.
4. Letter from Major Abbot to W.C. Weeks, May 28, 1900, Dam Tender's Records, St. Paul District Archives.
5. Jo Blatti, "Oral Interviews, Mississippi Headwaters Reservoirs," Report Prepared for the St. Paul District, Corps of Engineers, 1989, pp.1-5, 16.
6. See Mississippi River Headwaters Reservoirs, HAER No. MN-64.
7. Leech Lake Correspondence Books, St. Paul District Archives.
8. Voucher and Payroll Books, Leech Lake and Winnibigoshish, St. Paul District Archives.
9. See Mississippi River Headwaters Reservoirs, HAER No. MN-64.
10. 48 Congress, 1st Session, House of Representatives, Executive Document #76, pp.3-4.
11. Ibid.
12. 48 Congress, pp.34-36.
13. Letter from Captain Allen to Brig. General H.G. Wright, March 29, 1883, 48 Congress, p.16.
14. See Mississippi River Headwaters Reservoirs, HAER No. MN-64; 49 Congress, Second Session, Senate Executive Document # 115, pp.95-112.
15. Raymond Merritt, Conflict, Creativity and Controversy (Washington D.C.: U.S. Government Printing Office, 1980), p.112.